

### **REMARKS**

Claims 2-30 and 32-40 are pending in this application. In this response, claims 1, 31, and 41-44 have been canceled, and claims 2, 4, 5, 11, 12, 14, 15, 30, and 40 have been amended. No new matter has been added.

#### **Claims Rejections – 35 U.S.C. § 103**

##### **Claims 2-15**

The Examiner has rejected claims 5-10 under 35 U.S.C. §103(a) as being unpatentable over the Kar paper in view of Kathrow, et al., U.S. Pat. No. 6,393,438 B1.

Claim 5 has been amended in this response to include the features of claim 1, which has been canceled in this response. Claims 2-4 and 11-12 have been amended to depend directly or indirectly from claim 5, which is an independent claim.

Applicants incorporate by reference the arguments made in the previous responses regarding these claims.

According to the invention of claim 5, real-time event information relating to a first component is received, the first component and other components are compared to a fingerprint, and it is determined that a component exists when “all of the elements of the fingerprint corresponding to the known component are matched.” A “known component” is a component whose elements are known and can therefore be modeled. The fingerprint, which is derived from the model of the known component, can be used to determine the existence of a component on the IT system without prior knowledge of whether or not the component exists on the IT system.

Regarding the features from claim 5, the Examiner cites Figure 4 and Columns 4 and 11 from the Kathrow patent. In reference to Figure 4, the Kathrow patent states that “a method for determining whether a Windows registry file has changed from a prior version is shown....” (column 11, ll. 5-8; see also column 3, ll. 8-12) (emphasis added). Column 11 of Kathrow describes the generation of a “fingerprint” for the registry file. The Kathrow patent also discloses the generation of another fingerprint for a later version of the same file and a comparison between the two fingerprints:

“The fingerprint produced in step 430 is compared 432 with the fingerprint stored in step 420 as identified by the user in step 424, if applicable. If the fingerprints are identical 434, the

method terminates 440.... If the fingerprints are not identical 434, differences may be identified 436 between the values corresponding to the two fingerprints compared in step 432.”

(Figure 4, column 11, ll. 49-59)

Thus, the Kathrow patent generates a fingerprint for a component that is known to exist on the system. Kathrow then generates a second fingerprint for the same component and compares the two fingerprints to determine whether the fingerprints have changed and, if so, the differences between the two. In short, the Kathrow patent discloses comparing a first fingerprint of a file to a second, later fingerprint for the same file, thus detecting if the two files are different. Thus, unlike the claimed invention of claim 5, Kathrow does not use the fingerprints to discover component existence through the receipt of real-time messages, but instead merely determines “whether a Windows registry file has changed from a prior version.” (Col. 11, ll. 5-8.)

The claimed invention of claim 5, on the other hand, compares components based on event information to a fingerprint to discover the existence of a component. In particular, claim 5 requires “determining that at least one of the components exists when all of the elements of the fingerprint corresponding to the known component are matched.” As explained above, this element is not taught or suggested by the Kathrow patent.

In addition, as the Examiner acknowledges in the Final Office Action, “Kar does not show[] wherein discovering the existence of at least one of the components by receiving real-time messages and using at least one fingerprint ....” Applicants agree that Kar fails to teach or suggest at least these features from claim 5.

In the Final Office Action, the Examiner states regarding claims 5-10 and 13 that Kathrow shows the use of a fingerprint “to differentiate the former and later version of resources,” where the resource is a file that may have been updated. (Final Office Action at 24.) Although this may be true, this aspect of Kathrow does not teach or disclose the discovery of components through real-time messages and fingerprint analysis for the reasons explained above.

As the Examiner knows, a *prima facie* case of obviousness requires a suggestion or motivation to combine, a reasonable expectation of success, and a teaching or suggestion of all claim limitations. (MPEP §2143.) As Applicants have shown, the cited prior art fails to teach or suggest all of the claim limitations. Thus, Kathrow cannot be combined with the Kar paper to

form the claimed invention. Applicants, therefore, respectfully request reconsideration of this ground for rejection.

Claims 2-4 and 6-12 depend directly or indirectly from claim 5. These claims, therefore, are also in condition for allowance.

Claim 13 also stands rejected under 35 U.S.C. §103(a) as being unpatentable over the Kar paper in view of the Kathrow patent. The Examiner acknowledged that “Kar does not show matching event information with elements of one or more fingerprints of known components,” but instead cited Kathrow for this feature. For the same reasons set forth above in connection with claim 5, Kathrow does not disclose comparing components based on event information to a fingerprint. Claim 13 requires an analysis module to, in part, “match event information with elements of one or more fingerprints of known components using an accumulator to discover the existence on the IT system of at least one of the components.” Because this element is not taught or suggested by the Kathrow patent, the Kathrow patent cannot properly be combined with the Kar paper to form the claimed invention. Applicants, therefore, respectfully request reconsideration for this ground of rejection.

Finally, claims 14-15 have been amended to include similar features to those discussed above in connection with claim 5. As such, Applicants respectfully submit that these claims are also in condition for allowance.

**Claims 16-24, 25-27, and 28-29**

Claims 16-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Kathrow patent in view of the Kar paper. The Examiner acknowledged that “Kathrow does not show if the first component and the other discovered components match substantially all of the key low-level element of the fingerprint, using A SUBFINGERPRINT of a known refined component to discover the existence of a second component that corresponds to the known refined component.” Applicants agree. The Examiner cites the Kar paper at pages 5-6 as disclosing this feature.

According to the invention of claim 16, a subfingerprint is used to discover the existence of a second component. The subfingerprint is used if a component matches all of the key low-level elements of a fingerprint. After discovery of the component using the fingerprint, the “subfingerprint” is used to discover a particular version or optional feature for the component – i.e., a “subfingerprint of a known refined component” is used to discovery “a second

component.” Typically, the subfingerprint will contain information that is more refined than in the parent fingerprint.

The Kar paper does not cure the deficiencies of the Kathrow patent. In particular, there is no disclosure in Kar relating to the use of fingerprints or subfingerprints. In fact, with respect to claim 13, the Examiner acknowledged that “Kar does not show matching event information with elements of one or more fingerprints of known components.” The cited disclosure from pages 5-6 of the Kar paper relating to the static analysis of installation repositories and the construction of a dependency graph and a multi-level resource graph does not relate to the use of “a subfingerprint of a known refined component to discover the existence of a second component,” as required by claim 16. The cited section says nothing about fingerprints, subfingerprints, or the discovery of a “second component” using “a subfingerprint of a known refined component.” The Final Office Action does not cite any disclosure of the use of subfingerprints in rejecting claims 16-24, and Applicants submit that no such disclosure exists in Kar or Kathrow. Applicants respectfully request that the Examiner identify the portions of the Kar paper that the Examiner alleges teach this feature of the claimed invention if the Examiner maintains the current rejection of the claims.

For at least these reasons, Applicants submit that the combination of Kathrow and Kar does not disclose all of the claimed limitations of claim 16.

In addition, for the reasons set forth above in connection with claims 5 and 13, Kathrow does not disclose comparing components based on event information to a fingerprint. Kathrow does not, therefore, disclose the claimed features of claim 16 of “comparing the first component along with other components to at least one fingerprint, wherein the fingerprint represents key low-level elements of a model of a known component,” and “using a subfingerprint of a known refined component to discover the existence of a second component....”

Claims 17-22 depend directly or indirectly from claim 16 and are also in condition for allowance. Applicants respectfully request reconsideration.

Independent claims 23 and 24 contain similar limitations as those recited above for claim 16. These claims, therefore, are also allowable over the combination of Kathrow and Kar.

Claims 25-27 and 28-29 also stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Kathrow patent in view of the Kar paper. Regarding independent claims 25 and 28, the Examiner relies upon an analysis similar to that set forth for independent claim 16 above. For

the reasons set forth above, Applicants respectfully submit that the Kathrow patent does not teach the features of claim 25 of, “if the first component matches at least one low-level element of a fingerprint of a model of a known component....” Applicants also respectfully submit that the Kathrow patent does not teach the features of claim 28 relating to “using a fingerprint of a model of a known component to discover an existing component in the IT system by matching passive elements in the fingerprint with event information of the IT system.” Further, the Kar paper does not disclose the use of a “subfingerprint of a known refined component ... to discover a refined component,” as required by claim 25. Claim 28 requires a similar feature. Applicants, therefore, submit that claims 25 and 28 are allowable over the combination of the Kathrow patent and the Kar paper. Claims 26-27 depend from claim 25 and claim 29 depends from claim 28. These dependant claims, therefore, are also in condition for allowance. Applicants respectfully request reconsideration of this ground for rejection.

**Claims Rejections – 35 U.S.C. § 102**

Claims 30-40 stand rejected under 35 U.S.C. §102(a) as being anticipated by Keller et al. (Dynamic Dependencies in Application Service Management). Applicants respectfully traverse the rejection of these claims.

In response to Applicants’ arguments in its previous response, the Examiner cites to page 6, right column, first paragraph of Keller in the Final Office Action for features of the MLM relating to event reception and forwarding, resource discovery functions or topology services. (Final Office Action at 23.)

However, as Applicants stated in its previous response, the very next sentence after that cited by the Examiner on page 6 of the Keller paper refers to the construction of a “database of static dependencies.” Further, the Keller paper discloses obtaining dependencies by evaluating if the application “lists its dependencies” and by acquiring dependency information from the repositories in the environment, such as a “system repository, configuration and installation files.” (See Keller paper, page 5.) As the Keller paper explains, “This is possible because the dependency relationships of the majority of networked services are explicitly listed in the system repository.” (See Keller paper, page 5.) Thus, the Keller paper discloses acquiring dependency information from existing repositories of information, not through the reception of real-time messages.

On the other hand, claim 30 requires the step of “monitoring the usage of resources by the two components in the IT system by receiving real-time messages and, if a resource is used by one of the two components, generating a message indicating the use of that resource by that component.” Claim 30 also requires “accumulating each message” and “if the accumulated messages indicate that the two components use the same resource, then indicating that a dependency between the two components has been detected.” Claim 40 contains a processor to perform such steps. Thus, claims 30 and 40 relate to determining dependencies between components in an IT system in real-time, not by acquiring dependency information entirely from existing sources.

The Examiner also cites to language from page 6, right column, 2<sup>nd</sup> paragraph of Keller in asserting that Keller teaches monitoring usage of resources by receiving real-time messages. The cited language, however, does not teach the reception of real-time messages, but again depends upon existing repositories of information in the system, this time to receive what Keller refers to as “event notifications.”

The Keller paper does not teach monitoring the real-time usage of resources by components by “receiving real-time messages” and “indicating that a dependency between the two components has been detected” as required by independent claims 30 and 40. As such, the Keller paper fails to disclose at least this element of the invention from claims 30 and 40, and Keller cannot, therefore, anticipate claims 30 and 40.

Applicants submit that independent claims 30 and 40, and the claims that depend from those claims, are in condition of allowance. In particular, dependent claims 32-39 depend directly or indirectly from independent claim 30, and are therefore in condition for allowance. Applicants respectfully request reconsideration of this ground for rejection.

**CONCLUSION**

For the reasons stated above, Applicants believe that the claims now pending in this application are allowable. Applicants respectfully request reconsideration and allowance.

Applicants request an interview with the Examiner to discuss the basis for the rejections of the current claims. Applicants will contact the Examiner in the near future to arrange such an interview.

Please apply any charges not covered, or any credits, to Deposit Account No. 08-0219.

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Respectfully submitted,

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